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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL ADJUSTMENT ADMINISTRATION

1937 AGRICULTURAL CONSERVATION PROGRAM
NORTH CENTRAL REGION

Procedure for State Committees in Establishing County Limits for Soil-Depleting Bases

There are two fundamental principles which must not be overlooked if the proposed 1937 Agricultural Conservation Program is to be effective in obtaining an increase in the acreage of cropland used for the production of soil-conserving crops. The first principle is, that county limits for total soil-depleting crop acreage bases must be equitable as between counties and must represent the acreages normally planted to soil-depleting crops. The second principle is, that the soil-depleting bases and soil-conserving bases must be known by farmers before they begin their spring farming operations for 1937. Since many soil-conserving crops are among the first crops planted in a new crop year, it is extremely important that farmers receive notice of their bases before they begin their spring operations.

In order that the country limits for the 1937 Agricultural Conservation Program will be equitable as between counties and will be effective in obtaining an increase in the acreage of soil-conserving crops in 1937, the State Committee in cooperation with the North Central Division will recommend for approval by the Agricultural Adjustment Administration county limits for the 1937 Agricultural Conservation Program which are equitable as between counties.

The county limits for total soil-depleting bases for the 1936 Agricultural Conservation Program were expressed as a ratio of the total acreage in soil-depleting crops in the county to the total acreage of farm land in the county. Such ratios were established from data available at the beginning of the 1936 Agricultural Conservation Program. The county limits for the 1936 Agricultural Conservation Program were expressed as a ratio in order to permit the acreage of the total soil-depleting bases established in a county to conform to changes in the acreage of farm land in such county. At this time there are available in NCR-6, data for nearly all farms in each county showing the reported acreages of crops in 1935, and there will be available on NCR-19, data for a large number of farms in each county showing the measured acreages of crops planted for harvest in 1935 and 1936. Since these data are available, the county limits for total soil-depleting bases for the 1937 Agricultural Conservation Program will be expressed as an aggregate absolute county acreage limit for total soil-depleting bases. The basic data to be used in establishing the county limits will be data from the 1936 Agricultural Conservation Program and other reliable data which are available, such as that from the U. S. Census or assessors enumerations.

Sheets with the following sheet and column headings will be used in making the necessary calculations pertaining to county limits for total soil-depleting bases:

SHEET A

Column No.	Column Heading
1.	Reported acreage cropland 1936 NCR-11 farms (NCR-19, Col. 43).
2.	Measured acreage cropland 1936 NCR-11 farms (NCR-19, Col. 13).
3.	Adjustment factor (1 ÷ 2).
4.	Reported acreage cropland all 1936 work sheets (NCR-6, Col. 10 + 17 to 23, inclusive).
5.	Indicated measured acreage cropland all 1936 work sheets (4 ÷ 3).
6.	Reported 1935 acreage S. D. crops, 1936 NCR-11 farms (NCR-19, Col. 40).
7.	Measured 1935 acreage S. D. crops, 1936 NCR-11 farms (NCR-19, Col. 7).
8.	Adjustment factor (6 ÷ 7).
9.	Reported 1935 acreage S. D. crops all 1936 work sheets (NCR-6, Col. 10).
10.	Indicated measured 1935 acreage S. D. crops all 1936 work sheets (9 ÷ 8).
11.	Ratio 1935 acreage S. D. crops to cropland all 1936 work sheets (10 ÷ 5).
12.	Ratio 1935 acreage S. D. crops to cropland on 1936 NCR-11 farms (7 ÷ 2).

SHEET B

Column No.	Column Heading
1.	Reported acreage of cropland all 1936 work sheets (Sheet A, Col. 4).
2.	Reported 1935 acreage of all S. D. crops all 1936 work sheets (Sheet A, Col. 9).
3.	Total S. D. bases approved all 1936 work sheets (NCR-6, Col. 14).
4.	Ratio reported 1935 S. D. to reported cropland all 1936 work sheets (2 ÷ 1).
5.	Ratio total S. D. bases to reported cropland all 1936 work sheets (3 ÷ 1).
6.	Reported acreage of cropland on 1936 NCR-11 farms (Sheet A, Col. 1).
7.	Reported 1935 acreage of all S. D. crops on 1936 NCR-11 farms (Sheet A, Col. 6).
8.	Total S. D. bases approved for 1936 NCR-11 farms (NCR-19, Cols. 14 + 16 + 18 + 20 + 22).
9.	Ratio reported 1935 S. D. to reported cropland on 1936 NCR-11 farms (7 ÷ 6).
10.	Ratio total S. D. bases to reported cropland on 1936 NCR-11 farms (8 ÷ 6).
11.	Degree of selectivity of 1936 NCR-11 farms (9 ÷ 4).
12.	Degree of selectivity of 1936 NCR-11 farms (10 ÷ 5).
13.	Soil-depleting base appraisal bias (12 ÷ 11).

SHEET C

Column No.	Column Heading
1.	Measured 1935 acreage S. D. crops planted on 1936 NCR-11 farms (Sheet A, Col. 7).
2.	Measured 1936 acreage S. D. crops planted on 1936 NCR-11 farms (NCR-19, Col. 8).
3.	1936 acreage S. D. crops planted - 1935 acreage S. D. crops planted (2 ÷ 1).
4.	Measured acreage of cropland on 1936 NCR-11 farms (Sheet A, Col. 2).
5.	Approved total S. D. base on 1936 NCR-11 farms (Sheet B, Col. 8).
6.	S. D. base appraisal bias (Sheet B, Col. 13).
7.	Total S. D. base on 1936 NCR-11 farms adjusted for appraisal bias (5 ÷ 6).
8.	Measured 1936 acreage S. D. land on 1936 NCR-11 farms (NCR-19, Col. 8 plus depleting idle).
9.	1936 acreage S. D. land ÷ adjusted total S. D. base (8 ÷ 7).
10.	Indicated total S. D. base (Col. 8 ÷ 0.85 or the entry in Col. 9, whichever is larger).
11.	Ratio of indicated total S. D. base to cropland (10 ÷ 4).
12.	Ratio of 1936 acreage of S. D. land to cropland on 1936 NCR-11 farms (8 ÷ 4).

SHEET D

Column No.	Column Heading
1.	Ratio total S. D. acreage to cropland 1925 U. S. Census.
2.	Ratio total S. D. acreage to cropland 1930 U. S. Census.
3.	Ratio total S. D. acreage to cropland 1935 U. S. Census.
4.	Ratio total S. D. acreage to cropland 1929-33 average assessors.
5.	Ratio total S. D. acreage to cropland 1932-33 average assessors.
6.	Ratio total S. D. acreage to cropland 1935 assessors.
7.	Each county ratio in Col. 1 as a % of State ratio of Column 1.
8.	Each county ratio in Col. 2 as a % of State ratio of Column 2.
9.	Each county ratio in Col. 3 as a % of State ratio of Column 3.
10.	Each county ratio in Col. 4 as a % of State ratio of Column 4.
11.	Each county ratio in Col. 5 as a % of State ratio of Column 5.
12.	Each county ratio in Col. 6 as a % of State ratio of Column 6.
13.	Indicated measured acreage cropland all 1936 work sheets (Sheet A, Col. 5).
14.	Total S. D. bases approved all 1936 work sheets (Sheet B, Col. 3).
15.	Ratio approved total S. D. bases to cropland all 1936 work sheets (14 ÷ 13).
16.	Ratio of indicated county total S. D. base to cropland on basis of 1936 S. D. acreage (Sheet C, Col. 11).
17.	Ratio 1935 acreage S. D. crops to cropland all 1936 work sheets (Sheet A, Col. 11).
18.	Each county ratio in Col. 15 as a % of State ratio of Column 15.
19.	Each county ratio in Col. 16 as a % of State ratio of Column 16.
20.	Each county ratio in Col. 17 as a % of State ratio of Column 17.
21.	Statist preliminary county ratio S. D. to cropland as % of State ratio S. D. to cropland (basis Cols. 7 to 12 and 18 to 20).
22.	Statist indicated ratio of S. D. crops to cropland (21 x State ratio S. D. base to cropland).
23.	State committee recommended ratio of S. D. crops to cropland.
24.	State committee indicated acreage S. D. crops (13 x 23).
25.	Col. 24 scaled to equal State ratio S. D. base to cropland.

Sheet A is designed to provide a ratio of the indicated 1935 planted acreage of all soil-depleting crops to the indicated acreage of cropland for all farms in the county for which work sheets were executed in connection with the 1936 Agricultural Conservation Program. In computing such a ratio, it is assumed that for farms for which an NCR-11 was executed in 1936, the relationship between the reported acreage of cropland, as recorded on NCR-1, and the measured acreage of cropland, as recorded on NCR-11, is the same as the relationship would be for farms for which an NCR-11 was not executed in 1936. It is also assumed that for farms for which an NCR-11 was executed in 1936, the relationship between the reported 1935 harvested acreage of all soil-depleting crops, as recorded on NCR-1, and the measured 1935 planted acreage of all soil-depleting crops, as recorded on NCR-11, is the same as the relationship would be for farms for which an NCR-11 was not executed in 1936. Such a ratio is derived in three major steps as follows:

(a) By means of Columns 1 to 5, inclusive, derive the indicated county total measured acreage of cropland for all farms in the county for which work sheets were executed in 1936 by adjusting the reported county total acreage of cropland listed on NCR-6, by the relationship between the reported and measured acreage of cropland for all farms in the county for which forms NCR-11 were executed in 1936.

(b) By means of Columns 6 to 10, inclusive, derive the indicated county total measured acreages of all soil-depleting crops planted in 1935 for all farms in the county for which work sheets were executed in 1936 by adjusting the reported county total 1935 harvested acreage of all soil-depleting crops, as listed on NCR-6, by the relationship between the reported 1935 harvested acreage and the measured 1935 planted acreage of all soil-depleting crops for all farms in the county for which forms NCR-11 were executed in 1936.

(c) Derive the ratio of the indicated 1935 planted acreage of all soil-depleting crops to the indicated acreage of cropland for all farms in the county by dividing the entry in column 10 by the entry in column 5.

Sheet B is designed to measure the degree of selectivity of farms for which forms NCR-11 were executed in connection with the 1936 Agricultural Conservation Program with respect to the proportion of the cropland devoted to soil-depleting crops and also to measure the amount of appraisal bias in establishing total soil-depleting bases. The measure of selectivity and appraisal bias is used in

connection with computations on Sheet C. The measure of selectivity as indicated by the reported 1935 harvested acreage of all soil-depleting acreage is determined in three major steps as follows:

(a) By means of Columns 1, 2, and 4 derive for all farms for which work sheets were executed in connection with the 1936 Agricultural Conservation Program, the ratio of the county total reported 1935 harvested acreage of all soil-depleting crops to the county total reported acreage of cropland.

(b) By means of Columns 6, 7, and 9, derive for all farms for which forms NCR-11 were executed in 1936, the ratio of the aggregate reported 1935 harvested acreage of all soil-depleting crops to the aggregate reported acreage of cropland.

(c) Derive the measure of selectivity by dividing the entry in Column 9 by the entry in Column 4.

The percentage relationship between the ratio of the county total acreage of total soil-depleting bases to the county total acreage of cropland for all farms in the county for which work sheets were executed in 1936, and the similar ratio for all farms in the county for which forms NCR-11 were executed in 1936, may be considered a measure of selectivity. However, in making the computation in Column 13 on Sheet B, it was not considered as a measure of selectivity, even though labeled as such in Column 12, but was used merely as a computation in determining the amount of appraisal bias in establishing the total soil-depleting bases. The measure of appraisal bias is derived by dividing the percentage relationship between the ratio of the county total acreage of total soil-depleting bases to the county total acreage of cropland for all farms in the county for which work sheets were executed in 1936, and the similar ratio for all farms in the county for which forms NCR-11 were executed in 1936, as recorded in Column 12, by the measure of selectivity, as recorded in Column 11. To derive the measure of appraisal bias, as outlined on Sheet B, requires making the assumption that the degree of selectivity, as indicated by the total soil-depleting bases assigned to farms, should be the same as the degree of selectivity indicated by the reported 1935 harvested acreage of all soil-depleting crops on the same farms. If there is a difference, such difference is interpreted to be appraisal bias.

Sheet C is designed to provide a measure of the amount of diversion in 1936 for all farms in the county for which forms NCR-11 were executed in 1936, and to provide the ratio of the indicated county total acreage of total soil-depleting bases to the county total acreage of cropland, upon the basis of the 1936 acreage of land classified as

soil-depleting. Such a measure of diversion may not be representative of all farms in the county for which work sheets were executed in 1936, without making a correction by means of the appraisal bias factor in the total soil-depleting bases assigned to all farms in the county for which forms NCR-11 were executed. Such indications may be derived in the three major steps as follows:

(a) By means of the appraisal bias correction factor, the aggregate of the approved total soil-depleting bases for farms for which forms NCR-11 were executed in 1936 is corrected and the total of such corrected bases entered in Column 7.

(b) Divide the aggregate of the acreage of land classified as soil-depleting on farms for which forms NCR-11 were executed in 1936, by the aggregate of the total acreage of the total soil-depleting bases adjusted for appraisal bias for the same farms, to ascertain what would have been the amount of diversion in 1936 if total soil-depleting bases for such farms had been established without bias.

(c) In such cases where there is a diversion from the total soil-depleting base, as adjusted for appraisal bias, in excess of 15 percent, it would appear reasonable to divide by 0.85, the aggregate 1936 acreage of cropland classified as soil-depleting on farms for which forms NCR-11 were executed, in order to determine the aggregate of the indicated total soil-depleting bases for such farms which would have permitted 15 percent diversion in 1936. By dividing the aggregate of such indicated total soil-depleting bases for farms for which forms NCR-11 were executed in 1936 by the aggregate acreage of cropland for the same farms, we are able to derive a ratio of the aggregate of the acreage of total soil-depleting bases to the aggregate acreage of cropland based upon the acreage of land classified as soil-depleting in 1936.

Sheet D is designed to provide a summary of all county limit indications. In addition to Sheet D containing indications from the 1936 Agricultural Conservation Program, it also contains indications from United States Census data and Assessor's enumeration.

When computing the ratios indicated in columns 1 and 2 of Sheet D, use for the acreage of cropland, the acreage of cropland harvested plus crop failure, plus idle or fallow cropland, and use for the acreage of soil-depleting crops the acreage of crop failure, plus the acreage of the following soil depleting crops harvested:

Corn
Wheat
Oats, threshed and unthreshed
Barley
Rye
Buckwheat
Flaxseed
Rice
Small grains cut for hay
Sugar beets
Cotton
Tobacco
Potatoes
Sweet potatoes
Vegetables harvested for sale
Soybeans for all purposes, grown alone
Cowpeas for all purposes, grown alone
Field peas
Field beans
Sweet sorghum for syrup
Broom corn
Medicinal crops
Mint
Sorghum harvested for grain
Sorghum cut for silage, hay, and fodder
Popcorn
Mixed grains
Root crops for forage
"All other crops"
Millet seed
Sunflower seed
All other (vegetable and flower) seeds
Strawberries
Emmer and speltz
Hemp
"Crops grazed or hogged off, not including corn, annual legumes, alfalfa, sweet clover, etc."

When computing the ratios in Column 3 follow the same procedure as outlined for Columns 1 and 2, using data for such of the above listed crops as are available and including also, the number of contracted acres under the corn and wheat contracts for the year 1934 in computing the acreage of soil-depleting crops. The number of corn contracted acres will be supplied on forms C. R. - 22 by the North Central Division of the Agricultural Adjustment Administration.

The number of wheat contracted acres will be obtained by multiplying the base wheat acreage under allotment contract by 15 percent. The base wheat acreage under allotment contract may be found in W-60, issued May, 1935, by the United States Department of Agriculture, Agricultural Adjustment Administration, Division of Grains, Wheat Section.

When computing the ratios indicated in Columns 4 to 6, inclusive, use an acreage of cropland which by definition is as nearly comparable to that used in Columns 1 to 3, inclusive, as is possible, and use as the acreage of soil-depleting crops as many as possible of the crops listed in the preceding list of soil-depleting crops.

There may be some question about the validity of making a direct comparison of the ratios derived from the United States Census data and Assessor's enumeration data, with ratios derived from the 1936 Agricultural Conservation Program data, because of possible differences in the definition of cropland and differences in crop classification. For that reason it is necessary to compute each county ratio in Columns 1 to 6, inclusive, and Columns 15 to 17, inclusive, as a percent of the State ratio for the same series of data. By so doing, it is possible to determine whether or not the ratio in Column 15 for a certain county is too great or too small to be equitable, when compared with other counties and when compared with the State ratio.

The ratios on Sheet D, together with other information, will form the basis for the soil-depleting bases recommended to the Agricultural Adjustment Administration by the State Committee and the North Central Division.